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ABSTRACT

This report summarizes findings from an investigation of instructional television and radio utilization in Scotland, which was undertaken in three stages: (1) interviews with head teachers and audiovisual technicians or auxiliaries in 100 primary and 100 secondary schools to study the level of broadcast use, organizational and attitudinal factors facilitiating or inhibiting use, teacher awareness of broadcasting resources, and schoool organization; (2) discussions with over 400 primary and secondary teachers to analyze school curriculum and its subject-by-subject relationship to available broadcast materials, and the integration of materials into teaching; and (3) staff and pupil interviews and observations of teachers in 24 primary and 18 secondary schools concerning broadcast use and attitudes toward broadcasts. Following a brief overview of the project, three main aspects of the findings are emphasized, first for primary and then for secondary schools: factors facilitating the effective use of broadcasting (school personnel role and attitudes, personnel training, and school resources); factors pertaining to the effective use of broadcasts; and pupils response. Conclusions and recommendations complete the paper. (LMM)

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NATIONAL INTER COLLEGE COMMITTEE ON EDUCATIONAL RESEARCH

"SCHOOL BROADCASTING IN SCOTTISH SCHOOLS"

A. Macintyre et al

Report of the Inter-College Research Project on School Broadcasting

Jordanhill College of Education, 1981.

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FOREWORD

Broadcasts are extensively used in Scottish schools, both primary and secondary. Education authorities have facilitated this use by making substantial investments in equipment and in support services. The level of equipping and the amount of use are above the average for the United Kingdom as a whole. While much is known by broadcasters of the form of use of their output, and the quality of the programmes reflects the concern that the broadcasting staff have for good educational use of the materials, there is a low public awareness of the way that broadcasts are used by teachers and pupils. Indeed, there has been surprisingly little interest by authorities, schools and colleges in the form of use of this major educational provision which far surpasses national curriculum developments in its financial investment. Perhaps conscious of this knowledge gap, and of the need to provide potential teachers with better training in the use of broadcasts, the Scottish Colleges of Education through the National Inter-College Committee on Educational Research set up the project of which this is the summary report.

The project has had two main distinguishing features. It was the first time that all the ten colleges had attempted to work together on a joint project. It thereby met headon the difficulties inevitable in simultaneously crossing both subject and institutional boundaries, and in trying to operate with a team of part-time researchers across institutions. Secondly, it attempted to get at the practicalities of the effective organisation and use of broadcasts in schools and classes. This alone was no mean task, particularly for some of the college staff who inevitably had had relatively little prior contact with broadcasts as resources for teaching and learning, but also because the trail was already strewn with the bodies of others who had already tried. Hayter (1974) had neatly side-stepped the problem by concluding that "Using broadcasts well is no easy task", and that "Their potential contribution in the classroom, and to curricular developments in the school, is most effectively realised when the skill of the teacher is purposefully committed to their use, and this is most likely to happen when conditions are right". These and other conclusions were effectively the starting points for this project, the aim of which was to try to identify the parameters of good use in the classrooms of real schools where conditions may never be quite right. The extent to which it has been successful will be judged by the use of this report, and by the spin-off from the enormous amount of work in colleges and schools by the college representatives and, particularly, by the centrally based researcher.

Hayter CG (1974) "Using Broadcasts in Schools", BBC, IBA and ITCA.

Martyn Roebuck, HMI.,
August, 1981.

INTER COLLEGE RESEARCH PROJECT ON SCHOOL BROADCASTING

Members of Steering Committee

Martyn Roebuck (HMI) (Chairman)	Research and Intelligence Unit Scottish Education Department
Neil Alexander (Until Jan. 1980)	Education Officer, Argyll and Bute
Jack Carson	Learning Resources Hamilton College of Education
John Clapperton (Until June 1979)	Dunfermline College of Physical Education
Jack Ewan	Department of Teaching Aids Aberdeen College of Education
Derek Fraser	Department of Science Notre Dame College of Education
Bill Groves	Department of Social Studies Hamilton College of Education
Tony Lavender	Department of AV Media Jordanhill College of Education
Norman Lawrie	Department of Operational Research University of Strathclyde
Bert McCann	Educational Television Association
John McCormick	Senior Education Officer BBC
Aileen Macintyre	Research Assistant
Alex Main (until Nov. 1979)	Adviser on Education Methods University of Strathclyde
Dr. Gaye Manwaring	Department of Educational Technology Dundee College of Education
Roy Morrison (from Sept. 1980)	Department of Visual Arts Callendar Park College of Education
Joe Murray	Adviser in Educational Technology SCET
Gerard O'Brien	Assistant Officer for Scotland IBA

Ronald Richardson (Project Director and, until June 1979, Chairman)	Formerly Assistant Principal Jordanhill College of Education
Ina Robertson	Department of Primary Education Jordanhill College of Education
Robbie Robertson	Department of English Moray House College of Education
Keith Robinson	Director, Glasgow Centre, Scottish Curriculum Development Service
Bill Scholes (from June 1979)	Dunfermline College of Physical Education
Alistair Simpson (until May 1980)	Callendar Park College of Education
Cameron Slater (from Feb. 1981)	Education Officer STV
Cameron Smith	Department of Social Studies Craigie College of Education
Reg. Wilson	Department of Educational Sciences Craiglockhart College of Education
Ross Wilson (until Jan. 1981)	STV
Sheena Young	Education Officer Grampian TV

The research team is indebted to the Head Teachers and staff of the 450 + schools involved in the research. Without their help and co-operation this report would have been impossible.

1. AN OVERVIEW OF THE RESEARCH

The research project was established by the National Inter College Committee on Educational Research (NICCER) and funded by the SED from October, 1978 to investigate the use of school broadcasting in Scottish schools.

The steering committee consisted of the project director, the chairman, the research assistant and representatives from the broadcasting organisations (BBC, STV, Grampian TV), the Scottish Council for Educational Technology, the Educational Television Association, the Scottish Curriculum Development Service, Strathclyde University and all ten colleges. This was the first research project to involve all ten Scottish colleges of education whose representatives were responsible for the gathering of the data by school visiting and contact with teachers and pupils. They also participated in the design of the questionnaires and observation schedule used in the schools and in the analysis and write-up of findings.

Structure, Aims and Methodology

The research was in three main stages, preceded by a brief preliminary investigation into the uses of broadcast resources in the colleges of education and the training given to students in their use. A brief report of the findings is given in Appendix A.

Stage 1 (Full report in Appendix B) had the following aims:-

(a) to confirm the levels of use/non-use within the schools, both primary and secondary.

(b) to identify the organisational and/or psychological (attitudinal) features within the school which tend to inhibit or facilitate use by teachers.

(c) to obtain information on the awareness that teachers have of the range of broadcasting resources available to them.

(d) to identify what appear to be interesting features of the school organisation and what appear to be good examples of use for later follow up.

To this end 100 primary and 100 secondary schools in Scotland were selected, half of the sample selected being high users of broadcasting. A questionnaire (or aide memoire) was drawn up for use in these 200 schools and researchers visited the schools to interview individually members of staff: head teachers, assistant head teachers, principal teachers, class teachers, AV technicians or auxiliaries. These interviews, most of which were carried out in early 1979, were completed by September of that year.

Stage 2 (Full report in Appendix C) had as its aims:

(a) to study the relationship between available broadcast materials and the curriculum of the schools, subject by subject, in order to discover the appropriateness of content to the work of teachers.

(b) to discover how teachers integrate these materials into their teaching.

(c) to identify teaching situations suitable for closer study in Stage 3.

This part of the project, completed between August, 1979 and March, 1980, was carried out on a subject basis, with different colleges examining different aspects of the curriculum. Guidelines for discussion were drawn up for use by researchers in discussion with teachers. Practical difficulties forced the adoption of a variety of approaches: some meetings of groups of subject teachers were held; some researchers visited schools for individual interviews with teachers; in some cases questionnaires were sent to schools. In total over 400 primary and secondary teachers took part. Each of the researchers then wrote reports on the basis of their findings in each subject of the secondary curriculum and in each curricular area of the primary school.

Stage 3 The aims of the third stage (full report in Appendix D) were:-

(a) to identify different types of use of broadcast materials (by classroom observation) and the teachers' view of good use of broadcasts.

(b) to examine further the context of this use pursuing issues raised in Stage 1.

(c) to identify pupils' responses to the use of broadcasts.

The sample of schools at this stage was much smaller than at stages 1 and 2: twenty four primary schools and 18 secondary schools. A questionnaire, observation schedule and pupil response questionnaire were drawn up for use in schools where the visits were carried out in the spring and summer of 1980. Members of staff were interviewed, teachers observed using, preparing for, and following up broadcasts in the classroom and pupils asked questions about their attitude and response to school broadcasts.

2. THE MAIN RESEARCH FINDINGS

Introduction

The picture of broadcasting use revealed by this three stage investigation is complex, a tapestry of interwoven factors involving the broadcast output itself, the knowledge and attitude of teacher-users, the organisational and pedagogical policies of head teachers and principal teachers, levels of equipment and design of buildings, the provision of auxiliaries and AV technicians and the attitudes and responses of pupil-receivers. No single strand can reveal the whole picture, but an attempt will be made in the text which follows to examine a few of the principal threads which weave together to form the picture of broadcasting use in Scottish schools.

Broadly, there are three main aspects of our findings arising out of the different stages of the research, viz:

A. Factors facilitating the effective use of broadcasting.

B. Factors pertaining to the effective use of the broadcast within the classroom.

C. The pupils' response to broadcasting.

In the text which follows, these aspects will be dealt with separately for primary and secondary schools.

The more detailed findings of the three stages of the research can be found in Appendices B, C and D along with the report of the preliminary investigation into the college use of broadcasting (Appendix A), some examples of broadcast use observed by researchers during Stage 3 (Appendix E) and a brief examination of the problems and successes of such an inter-college research undertaking (Appendix F). In the following shorter report, which summarises the main findings of the research, the letters and numbers in the right hand column refer to the appendices where the data can be found, e.g. D10(4) refers to Appendix D, page 10 section 4.

A. FACTORS FACILITATING THE EFFECTIVE USE OF BROADCASTING

There are various features within a school which facilitate or inhibit the effective use of school broadcasts. Principally these are the attitudes of school personnel and their role with regard to broadcasting, the facilities within a school in terms of the building, the relevant hardware and software and the translation of these into appropriate organisational structures.

1. The role and attitudes of school personnel

The Head Teacher

Whether it is the head teacher who is in charge of broadcasting use (in 52 Stage 1 schools), the AHT (in 37) or the auxiliary (in 1), the main perceived role appears to be that of facilitator i.e. organising the purchase and maintenance of equipment, the timetabling and recording of broadcasts, arranging the use of rooms and the distribution of information. The role of the head teacher sometimes involves the development of a policy such as fixing limits to the amount of broadcasting to be taken by any teacher in a week (found in 15 Stage 1 schools). It is interesting to note that in the 24 specially selected Stage 3 schools, as many as two-thirds of the head teachers fixed an upper limit to the amount of broadcasting to be used (most commonly two TV and two radio programmes per class per week). Occasionally a head teacher decides which series are to be taken (in 11 Stage 1 schools and only two Stage 3 schools). Typically, however, even where the number of broadcasts per class is limited, it is considered part of the teacher's role to decide what to see and hear and how to use it. *B12(8)* *B25(2)* *D7(3)*

While all 24 head teachers interviewed at Stage 3 believed that the school curriculum could benefit from the use of school broadcasting and two-thirds considered broadcasts sufficiently important to determine the timing of certain work in the course of the school year, only nine considered it their responsibility to give instruction to new members of staff in ways of using broadcasts in the classroom. If advice is needed, head teachers tend to see it in terms of the handling of equipment rather than in techniques of use in the classroom. Among the Stage 3 schools, advice in the handling of hardware was provided twice as often. *D16(2,1)* *D14* *D10(4)*

Formal leadership in the discussion of the pedagogic implications of the use of broadcasts and the possible impact upon the curriculum is not frequently seen as part of the head teacher's role such considerations being left to informal discussion among the teaching staff. *B13(14)*

Clearly the attitude of the head teacher is one of the important factors in determining level of use and how seriously broadcasting is taken as a means of augmenting the curriculum. Interest, however, takes many forms: the diverting of financial or accommodation resources to broadcasting, the encouraging of staff to consider using a particular series, exercising control over broadcasts being used or even showing a willingness to share the recording chores with the school janitor. When researchers made specific reference to the attitudes of head teachers they were more usually positive than negative, particularly in *B22(7)*

association with schools using a lot of broadcasts.
Enthusiasm, conviction of the value of broadcasting and encouragement of its proper use were all mentioned. The generally positive attitude is accompanied by an appreciation of the high quality of broadcast content and presentation. *B27(6)*

The great majority of headteachers interviewed in Stage 1 claimed that they had some systematic organisation of the use of broadcasting providing the appropriate management of resources to suit the needs of their schools. *B12(8)*

The Class Teacher

The role and attitude of the class teacher is crucial in determining use, given appropriate support in the way of equipment provision and management of resources.

Teachers perceive considerable freedom in their choice of broadcasts, although that choice may be within a limited range of options. Only six of the 36 Stage 3 teachers had no choice. *D20(2)*
Freedom as to how broadcasts are used is even greater, teachers being free to organise their own class work to a great extent. *D19*

An enthusiastic class teacher might also have an important role in influencing her colleagues during informal discussions about programmes she has taken.

The survey indicated that the attitudes of teachers using broadcasts are based on sound knowledge, the results of effective distribution of advance broadcasting information in schools, and on their own interest. More than half the teachers interviewed in Stage 1 were considered by the researchers to have a good knowledge of available programmes. Ninety out of a sample of 164 were so described by researchers while 52 were thought to have a medium knowledge, and only 22 were considered to have a poor knowledge. *B13(11)* *B16(22)*

The attitude to broadcasts is generally a positive one, despite some criticism of individual series or programmes and some aspects of presentation and timing difficulties. Two-thirds of the teachers in the Stage 3 sample considered the contribution of broadcasting to teaching a significant, rather than a peripheral one. Appreciation of its value as an important resource for teaching was often expressed. Thirteen of the 36 teachers interviewed in Stage 3 thought that broadcasting stimulated pupils' imaginations, motivated and encouraged them, gave them new ideas and made them think; another 12 said that it provided sound, factual, well-researched information and supplemented teacher expertise. *B20(2,3)* *D23(5)* *D17(3)* *D18*

Individual areas of the curriculum seem to generate particular attitudes to broadcasts, e.g. mathematics series do not often attract teachers who are not good at the subject themselves but music broadcasts do. Any differences this may suggest seem to be overridden when the teacher's attitude is a positive one.

In the area of Language Arts, Stage 2 teachers reported that pupils seemed more inattentive with radio than colour TV, and some teachers asked for a greater number of visual aids to accompany broadcasts. Nevertheless, radio was admired for its flexibility and ease of use, and schools which attempted some form of training in listening skills were noticeably more enthusiastic about radio than schools which adopted a passive stance. It was a general feeling, however, that Language Arts was less well served by radio than TV. C5–C55

Mathematics programmes were rated highly although there was some feeling that information was delivered at too rapid a rate. Teachers' notes were considered essential, and all who used pupils' pamphlets found them of value although cost was proving a severe limitation on use.

Teachers considered programmes in the area of Environmental Studies to be of great value. Junior and senior classes tended to use programmes selected from a series whereas the infant classes used their programmes as a nucleus for organising the term's work. Lack of listening skills was again commented upon.

In Aesthetic subjects use of radio - and music programmes - predominated, and there was some feeling that more attention should be paid to this area by television: visual arts, it was felt, was particularly poorly treated. It was thought by some that TV packed in too much information per programme, and that radio promoted listening skills.

Physical Education teachers in the sample schools only used radio, and it was universally agreed that recorded programmes were preferable. There was a strong feeling that more attention should be paid both to the language used and to the structure. Specific guidance should be given to encourage movement patterns, more up to date characters and tales should be used, and children should be told the <u>whole</u> story before <u>parts</u> of the story were related to movement.

In Religious Education teachers were very much more pleased by the contribution made by radio than TV - especially "Scottish Religious Service" (some teachers thought that it was the only schools' religious programme available, and one of this group had been using it for 17 years). Only "Playfair" was considered to be successful among TV programmes - and only by a minority, some of whom felt, along with others, that its ideas were too difficult for P7.

With the exception of music, movement, drama and RE broadcasts where strong series loyalty was demonstrated, radio is not so well thought of as television, despite the greater flexibility of use it offers. Perhaps teachers are not always sure of the best way to use radio, or how to train pupils in the necessary listening skills. D25 D26

While teachers were aware that the broadcasting agencies might be contacted directly there was very little evidence indeed that more than a few ever did - apart from the formal completing of the annual returns and some use of comment cards. There was, however, throughout the study a feeling expressed by a relatively small number that the agencies might make more effort to contact the schools. *B20(3)*

Access to general output (perhaps because of the lack of VCRs) was rarely mentioned as a desirable feature of use.

Teachers saw, in general, very little difference in the quality of the services offered by the BBC and the ITV companies. In Stage 3 there was a very slight tilt in the direction of the BBC. *B20(2)* *D29(12)*

In spite of the generally positive attitudes, there are still sufficient problems of accommodation, equipment, etc., to create some unfavourable attitudes to broadcasting use. *D23(4)*
Perhaps the most universal criticism of the provision concerned the "Englishness" of so many programmes in terms of content, interests and language, and most importantly, that the appearance of programmes was often geared to the English school year. *B20(3)*
However, broadcasting offered for most a valuable, extra dimension and with its professional style, novel and innovative approaches, it was also an excellent originator of work.

Such strongly positive opinions were regularly expressed throughout the course of the study - by pupils as well as teachers.

The Auxiliary

The role of the auxiliary with regard to broadcasting use is seen as crucial by head teachers and teachers alike. In the 47 Stage 1 schools where auxiliaries were involved in the management of broadcasts, it was in the area of recording radio programmes (42 schools) that their help was most obvious. Although most auxiliaries saw broadcasting as a minor part of their responsibilities, some recognised that they were essential in keeping the school's system going, or saving time for the teacher. *B14*

A larger proportion (almost five-sixths) of the Stage 3 schools had auxiliaries who played a part in facilitating broadcasting use, keeping receivers and recorded materials in a central place, recording programmes and often setting up equipment for use. *D9*

Almost invariably auxiliaries are keen to give a good service, take pride in knowing the eccentricities of their own equipment, and might even undertake to record items at home in the holidays on request. This positive attitude is in spite of various problems they encounter to hinder their work. *B14(17)*

2. The training of personnel

One important factor which might encourage the use of school broadcasts and make for their better use is the training teachers receive in their use. Two-thirds of teachers interviewed in Stage 3 stated that they had received no training at all. Of those who had had formal training (the more recently qualified teachers) most described it as very limited. This rather gloomy picture was reinforced by the preliminary investigation into training in broadcast resources given in the Colleges of Education, which indicated inadequate provision. *D17(2)* *A9*

About half the head teachers interviewed in Stage 3 thought teachers needed more assistance with the use of school broadcasting, most considering such training the responsibility of the Colleges of Education. While three-quarters of these heads were prepared to instruct young members of their staff in the handling of equipment, only half that number were prepared to give instruction in ways of using broadcasts in the class. *D11* *D10*

In 86% of the Stage 1 sample schools it was claimed that some advice about school broadcasting was given usually by AHT or HT. This was sometimes described as "informal" or "if needed" and sometimes concerned the choice of programmes, the use of equipment or the effective use of broadcasts. The general impression gained by researchers however, was that it was mostly casual and informal, with little importance attached to it. *B13(14)*

A clear need emerges for a more systematic approach to the handling of apparatus, the previewing of programmes and discussion of teaching styles built around broadcasts, whether by the schools themselves or the colleges of education, the local authority or the broadcasting agencies.

3. The material and physical resources of the school

The Equipment

While all schools have radio and virtually all schools have TV, only three-quarters of the Stage 1 sample schools were equipped with colour television (a similar figure to the Annual Survey). All but one of the Stage 3 schools were thus equipped. Since these schools were specially selected as being schools where good use of broadcasting was being made, this would suggest that the higher provision of equipment might be a factor. Moreover, the top ten users of broadcasting in the Stage 1 sample were twice as well equipped with TV sets as the lowest ten users. *B6* *D3(2)* *B26(2)* *B27(2)*

When members of staff in the Stage 1 schools were invited to comment further about broadcasting in their schools, comments about deficiencies of equipment and facilities formed about one-third of the responses, and of these the most frequent comment was the wish for the school to have video recording and playback *B19*

equipment. Researchers in their comments on visits to these schools observed the need for such equipment in almost a quarter of cases. This observed need was supported by the Stage 3 sample of teachers almost half of whom mentioned the need for a VCR in order to bring about what they saw as good and effective use of broadcasts. Apart from the more flexible timetabling offered by the use of a VCR, the stop-start, review and preview facilities would be educational advantages. *B22(6)* *D27(a)*

Clearly the provision of equipment is an important pre requisite in facilitating the use of broadcasting, and inadequacies in that provision are perceived by teachers to inhibit use. Difficulties caused by poor reception/interference/unreliable TV or aerial were reported by teachers in 12 Stage 1 schools, while the need for another TV was mentioned 10 times. Nevertheless some schools manage to overcome such inadequacies of equipment sufficiently to make good use of broadcasts. *B19/1)*

While there is probably a minimum necessary level of equipment for each school to facilitate the use of broadcasting, nevertheless other factors seem to be even more important in determining levels of use. *B30(3,4)*

The school building

None of the school buildings in Stage 3, whether older schools with central halls or modern open-plan schools, was designed to facilitate use of broadcast materials. Many imposed constraints(noted by 13 Stage 3 teachers)which militated particularly against the use of television. A variety of problems relating to the siting of the TV were noted: the problem of moving a class some distance in order to view, particularly when this necessitated going outside in winter; the unsatisfactory nature of the viewing area, (e.g. stage) or its use for other activities (such as dining), with consequent restrictions on availability; the lack of a special TV room In addition, the necessity of two or more classes sharing one room for viewing was disliked by some teachers. Different levels within the school, inadequate blackout, bad acoustics all imposed problems at times. Timetabling problems were created by the use of only one or two rooms for TV. *D23(4)* *B19(1)* *D23(4)* *B19(1)* *B19(1)* *D23(4)* *B23(9)* *D23(4)*

The software

In the Stage 3 sample of schools, advance information about broadcasting was disseminated within the school by the HT or AHT in most cases and in the great majority of cases (31 out of 36) arrived in time and contained sufficient information to assist forward planning by teachers. However, a few teachers said the material was sometimes late or felt that the content of the teacher's notes was inadequate. *D22(3)*

With regard to the use of teacher's notes, teachers' comments were generally favourable: 90% of the sample in Stage 1 for *B33(8)*

radio and 94% for TV used teacher's notes and most considered them valuable. Virtually every teacher in the Stage 3 schools possessed an individual copy. *D35(2d)*

Pupils' booklets (although, of course, not available for every series) were used less: only 41% of the sample in Stage 1 used pupils' booklets for radio and 32% for TV, but this was an indication of lack of money rather than any perceived lack of educational value. The cost of purchase was an inhibiting factor with more than half the Stage 3 teachers and was often cited as a reason for non-purchase by Stage 1 teachers. This lack of pupils' pamphlets did not necessarily restrict the use of broadcasts, however. *D36(2f)* *B18*

In almost four out of five Stage 1 schools, staff felt the supply of sound cassettes to be adequate, but only 24 had a library of tapes or cassettes. Moreover only 20% of schools visited held a central list of radio recordings. *B6(2)* *B15*

In over two-thirds of Stage 3 schools recorded tapes were kept, but in more than half of these the stock was very small. Recordings, stored most frequently in the auxiliary's room, were kept for only one to two weeks, then cleared. This use of the recording facility to shift the time of the broadcast is possibly the appropriate function in a primary school. *D30*

Thus, while the distribution of information in schools seems good on the whole, costs inhibit the purchase of broadcast support materials, particularly pupils' pamphlets. The limited stock of audio tapes available in schools restricts the long-term storage of recorded tapes.

B. FACTORS PERTAINING TO THE EFFECTIVE USE OF BROADCASTS

1. Broadcasts and the Primary School Curriculum

Teachers' reasons for choosing broadcasts

When Stage 1 teachers were asked their reasons for choosing the broadcasts they used, the most frequently given reason could be described as "curriculum match", the extent to which a programme fits into the syllabus or curriculum. Other important considerations were "specialist substitution", where programmes are taken to fill gaps in the teacher's own range of knowledge or skills (this was most typically the response of teachers to music programmes). Teachers also valued the ability of a programme to stimulate classes initially to an enjoyable engagement with its subject matter and later to follow up activities. Appropriateness for the target age group, and the teacher's own experience in using earlier series were other important factors. Similar reasons were given by the Stage 3 teachers. The most frequently given reasons for not using broadcasts were lack of time and lack of curriculum match. *B16(23)* *D33(2b)* *B16(24)*

As far as finding out about programmes in advance of use, pre-publicity in the form of BBC/ITV publications was cited by two-thirds of Stage 3 teachers as a source of information. Other teachers' opinions of a series was an important if informal element in determining choice as was the decision of the head teacher or assistant head who sometimes assigned or recommended or vetted choice of broadcasts. *D33(2a)* *D20(2)*

Integration of broadcasts with specific areas of the curriculum

In Stage 2 of the research over 200 teachers in 95 schools answered questions and made general observations about the use of broadcasting in primary schools.

Six curricular areas were dealt with, each separately, viz. Maths, Language Arts, Environmental Studies, Aesthetics, PE and Religious Education. Although in general the teachers representing the areas of curricular interest indicated that integration of broadcasting within the curriculum was a good and necessary thing, this was not always easily achieved, and different schools suggested different solutions to the problem of the curricular integration of school broadcasting. There were some marked differences in the ways in which each of the curricular areas studied approached the exercise of using broadcasting within the learning situation (though this may have been more a reflection of school practice than of any special feature of the subject area.)

Language Arts

The curricular area of Language Arts, as seen by the schools, did not necessarily correspond solely to those areas covered by "Language Arts" programmes. Several programmes described as being of use to Environmental Studies were used as part of the Language Arts curriculum, in that they provided a stimulus for works related to language.

In general, although the degree of integration varied, there were serious attempts being made to use the media as a legitimate and unobtrusive part of the ongoing work of the class. In simple terms there were two main approaches, with variations between these, to organising broadcast material within the total school curriculum, (and thus including Language Arts). *C7/8*

(a) The timetable/curriculum for the whole school, or given class, was drawn up well in advance of a forthcoming school year. Teachers then chose to take programmes which suited this pattern.

(b) A flexible curriculum was created and the programme output for the coming year was consulted. Programmes deemed valuable and suitable were selected and these were chosen to act as an integral part of the class work. The sequence of work of the curriculum was organised to facilitate the taking of the programmes.

The organising of the school curriculum was essentially the work of the head and/or assistant head teacher, but at the level of the scheme of work for the whole year of any given class there was a dichotomy in the practice, viz:

(a) In some schools the head teacher controlled the curriculum of individual classes and the class teacher was given no choice in the work to be done.

(b) In some schools the individual teacher had a great degree of independence in ordering the content and sequence of work to be undertaken - generally with specific guidelines and constraints set by the HT.

Nonetheless in all cases there was a general observation that ultimately the control of broadcasting, its use, and the amount to be taken, and when, was in the hands of the head teacher.

Mathematics

In the primary school most classes follow set strategies for teaching mathematics based upon a small number of published mathematics texts, (e.g. Heinemann Maths, or Fletcher Maths, etc). Thus the sequence and structure of the learning exists prior to any use of the media. The broadcast programmes tend to be used as back-up facilities to work already going on in class, rather than as curriculum innovators or developers. They act as valuable "starters" for forthcoming work or as "reinforcers" of work previously undertaken. Yet, on the whole, the role of such programmes within the Mathematics curriculum was seen as valuable in that they provided fresh, stimulating visual material (for TV) in a way unavailable to class teachers. Moreover as several teachers noted, there was always the possibility, with careful thought, of resequencing the set course to link in with broadcast material. *C12*

Environmental Studies

Like Language Arts, Environmental Studies cover a very wide curricular area and moreover include a range of traditional "subjects" within its bounds. The programmes broadcast, though occurring as a series, were often based on some central theme, but the sequence of these was not so significant as in Mathematics. Thus, as many schools seemed to use selected individual programmes from a series as took the whole series. Programmes and their content often acted as starters for the development of "Centres of Interest" or project work. Because of the visual impact relating to study of the environment, TV tended to be used more than radio. However, the practical constraints inherent in its use in schools with limited viewing facilities was an inhibiting factor, affecting the degree to which curriculum integration could be achieved. *C15/16*

Aesthetics (Art and Music)

Programmes were taken because of the help they provided in extending and developing the curriculum, something particularly noted in the use of the series "Watch" for Art work. However, the degree to which integration was achieved varied widely. In some cases teachers had great freedom to fit the use of broadcasting to their existing schemes of work whereas others used programmes merely to add interest. *C22*

Of note is the fact that in many schools the broadcast output of Music programmes becomes in effect the class scheme of work or school curriculum in that subject, especially where the teacher feels him/herself lacking in the specific skills required for Music. Radio programmes and recordings on cassette are of considerable significance to the whole music curriculum, not merely as an enhancer or stimulus, but as the total component of the work done in that subject.

What has been said of Music is also, to a lesser degree, true of Drama, where again the media act as much as an instructor to the teacher as to the pupils.

Physical Education (including Movement and Drama)

Teachers noted the importance of radio as a teaching aid and all agreed that the use of recorded material was infinitely preferable to using off-air broadcasts. By using recorded material they were able to mediate between the broadcast and the children explaining terms, repeating instructions etc. Moreover, the ability to store taped material for future class work was appreciated. The programmes were considered to be a considerable aid to teaching by teachers insecure in the role of PE curriculum innovator, the broadcasts themselves becoming the scheme of work. *C24*

While some schools made no, or only a limited, attempt at integration there were schools where imaginative and innovative use was made of themes from movement lessons in other curricular areas. *C27*

Religious Education

Radio proved to be most popular in this curricular area. The programmes themselves seemed to form an important part of the curriculum of several schools, but tended to be dealt with discretely, only being integrated with other curricular areas occasionally. Roman Catholic primary schools did not use "Scottish Religious Service", while in non-denominational schools this programme was popular, often acting as the curriculum in RE for senior pupils. *C29*

Television programmes were taken more for their "social utility" than for any intrinsic religious message, particularly where such programmes dealt with issues of morality.

General observations

There seem to be three patterns by which programmes relate to the curriculum, each closely, but not always, coincident with certain curricular areas. These broad patterns are generalised for specific exceptions could be noted to each.

(a) Programmes which can be used "across the curriculum" either as innovators or "back up" to large themes of work or centres of interest tend to be reasonably well fitted into the curriculum. Language Arts and Environmental Studies fall into this category. Sometimes the programmes, known well in advance, guide or initiate the work for the time of the broadcasting of the series. On other occasions, programmes which occur fortuitously in tandem with some on-going work, are used as major back up resources and stimulators of activities.

(b) The curricular area of Mathematics tends to be fixed according to some published scheme of work in most schools. The media are used selectively as a reinforcing and stimulating resource to aid in mathematical understanding. The media output does not act as an innovator or developer of work.

(c) There are areas in which teachers feel that they lack specialist expertise, particularly in Aesthetics, PE, and Drama and RE., and here broadcast programmes, singly or in series, often act as the whole or part scheme of work followed by the teacher. In a sense the media take over from the teacher as instructor, initiator and developer.

Problems noted

Radio does not present major problems in its use within the curriculum as all schools have (except where unfortunately stolen) facilities for recording and play-back of broadcasts. The help of a well organised auxiliary is of considerable importance in the smooth running of the curriculum at those points when radio programmes are to be used with a class.

Television presents several difficulties in that very few primary schools have video recording facilities and TV programmes have to be taken "live". This necessity leads either to complex time-tabling exercises being necessary to allow classes to view broadcasts of significance to the ongoing curriculum, or to programmes being omitted from the class work.

Common to all broadcasting are certain complaints which are specific to Scottish schools and these centre on the timing of programmes many of which are geared to the English pattern of term times rather than Scottish. Thus, as far as Scottish schools are concerned, there are large areas of time - especially August and September, - when live programmes are not available to schools although the work of the curriculum is well under way at that time of the year.

2. The Good Use of Broadcasts: the practice in selected schools

Introduction

The main focus of the third stage of the research was the good use of broadcasts in the classroom. Teachers were selected during Stage 2 on the basis of their apparent good use of broadcasts as revealed in discussion with researchers. *D1*

In the drawing up of the questionnaire, observation schedule and pupil response questionnaire, the traditional picture of what constituted good or effective use of broadcasts was assumed: that the teacher would prepare herself for using the broadcast by familiarising herself with the programme content and perhaps preparing relevant materials for the class; that the class would generally be prepared by the teacher for the broadcast; that pupils might be directed to carry out certain activities during the broadcast under the supervision of the teacher; that there would be some follow up activity for most broadcasts either immediately or later or both.

In the event, these views of what constituted good and effective use matched the teachers' views of the ideal of good use. The teachers interviewed in Stage 3 believed that the programme should be matched to the school curriculum and classwork, that good preparation by teacher and of the class was necessary and that the programme should generate follow up work. They also believed that the teacher should have the facility to preview and pre-hear programmes in advance in order to aid selection. Moreover, television should be in colour, taken privately by one class at a time, and rooms for viewing or listening should be free of distraction and the teacher should always be present during the taking of a broadcast. *D27(9)* *D28*

However, it was not thought that this ideal could be readily achieved except in a small number of cases. *D28(9b)*

Related to this notion of good use was the belief that four programmes per week (usually two TV and two radio programmes) was the optimum number. A greater number would mean insufficient time for the preparation and follow up seen as necessary components of use.

Pupils themselves in their responses reinforced the perceived importance of preparation and follow up, with three out of four primary school pupils in favour of preparation before a TV broadcast, at least sometimes, and almost all enjoying doing things about the programme after viewing it. Responses for radio broadcasts were slightly less positive. *D57* *D58* *D65/66*

Preparation

Teachers in Stage 3 were both interviewed and observed using broadcasts in the classroom and this revealed that preparation for programmes was generally twofold: firstly, the process by which the teacher acquaints herself with the contents of the forthcoming programme, and secondly, the teacher's subsequent communication with the class in terms of tuning them in to the programme. The former was reported to researchers, the latter observed by them. *D27(8)* *D40*

Most teachers (34 out of 36) interviewed in Stage 3 claimed that they always familiarised themselves with the programme in advance as the first stage of preparation. This was done mostly by reference to the annual programme and teacher/pupil pamphlets (generally obtained well in advance), and to a lesser degree by pre-listening (including prior use) or advance from previous users. Facilities available within the school for pre-viewing TV broadcasts were non-existent although more than two-thirds had pre-listening facilities. *D29(11)* *D33(2a)*

There was a high level of use of teacher's notes among these teachers, with virtually every teacher possessing an individual copy. *D35(2d)*

The vast majority of these selected teachers, having chosen to take a programme or series of programmes, saw preparation of the pupils immediately prior to the broadcast as an integral part of taking the broadcast. This was the case for both radio and TV. The few exceptions were instances where the programme was used as a "starting point", or where there was a close affinity between class topic and programme content, or where the teacher claimed to have insufficient time to prepare her class. The preparation of the class usually took the form of telling them about the programme content, e.g. key concepts and words (including recapitulation of previous programme) perhaps referring them to on going class work and also giving them advice about their behaviour on the way to the TV room and also during the programme. The mode of preparation varied according to the nature of the programme (e.g. preparation for Music and Movement programmes often had a movement component to complement the understanding of the programme theme), but often followed a question and answer pattern. *D38(1a)* *D40(1a)* *D38(1b)* *D40(1b)* *D27(8)* *D40(1c)*

With two exceptions, the class had to move to the GP or other room in order to take a TV broadcast, but this was not so for radio where in nine instances broadcasts were taken in the classroom. Exceptions to this were the Music and Movement broadcasts where the class would move to the hall or gymnasium. Preparation, however brief, usually took place in the room in which the programme was taken immediately prior to the broadcast. *D46(2a)* *D43(2)* *D38(2d)*

Series/programmes and the scheme of work.

All Stage 3 teachers said that they used whole series and 19 reported that on occasions they used either single programmes or selections made from a series. Only three teachers used excerpts from programmes (lack of video recording equipment would make this impossible for TV programmes). *D31(15a)*

When whole series were used, there was no clear consensus on whether the use of a complete series necessitated modification of the scheme of work, or made little difference to it. Some programmes formed part of the scheme of work; others were used more flexibly as a basis from which to extend, develop and adapt the scheme of work; yet others made a self-sufficient contribution, or were a complementary extra. *D36(3)*

Media preference.

While the head teachers' responses in Stage 1 suggested that TV had a considerably higher level of use than radio and pupils - particularly in the older age groups - overwhelmingly preferred TV, only just over half (19) the Stage 3 teachers considered TV the more satisfactory medium. Thirteen claimed to use TV more often, as opposed to 12 for radio, with 11 claiming to use both equally often. *B8* *D67* *D25(6)*

Conditions of use.

Despite the fact that the observations were of good use, in almost 40% of the instances of observed use of radio, adverse comments were made by observers about the quality of sound output, which in turn affected these lessons in particular ways, e.g. "The sound quality was so poor that children had to be brought round the speaker to hear what was happening, and then had to be respaced and instructions repeated by the teacher to get the children moving (Primary 1, Movement broadcast)". Poor sound resulted from a cassette recorder without suitable speakers. *D43(1)*

While vision and sound were satisfactory in every observed instance of TV use, there was one factor which militated against pupil learning: the television sets were in all instances placed in a relatively elevated position (on trolley, table, etc). In 11 out of 14 researcher observations children sat on the floor to view programmes. Observers commented that this meant children had to crane their necks to see the screen, in addition to being uncomfortable through sitting on the floor. *D46(1)*

The broadcast in use.

While radio programmes were, in most instances, taken by a single class, by contrast, 50% of the use of TV saw the classes joined for the occasion. Radio programmes were in most cases pre-recorded and played at an appropriate time: by contrast, only one of the observed uses of TV noted the use of a pre-recorded programme. *D43(2)* *D47(2bc)*

Supervision or class management was clearly not a critical issue in either the use of radio or TV. Pupils were generally interested in the programmes, and thus satisfactory supervision appeared to be achieved mainly through the presence of the teacher. Those control behaviours in which teachers did engage tended to be statements highlighting particular aspects of a programme in order to focus attention, or took the form of a reminder to the class/individuals to pay attention since questions would be asked regarding the programme once it had finished. Few instances were recorded of the taking of written notes. *D44(dc)* *D47(dc)*

Children over a wide age range associated with the various programmes in various ways. For example, a Primary 1 class taking a Language Arts programme would laugh and clap spontaneously with Lenny the Lion and "mouth" the reading with him, or a Primary 5 class would attempt to calculate faster than the presenter in a Maths programme, or a Primary 1 class would wish the presenter good morning late in the afternoon (recorded programme) and even emulate the presenter's English accent! *D48(iv)*

Teachers, in addition to exercising a tacit form of class control, on occasions talked through or over a broadcast in order to highlight an aspect or clarify a particular concept. This took place in approximately 70% of the uses of radio, but for less than 40% of the uses of TV. Equally and because of the "live" usage of TV compared with the recorded pattern of use of radio, TV programmes were not interrupted, while teachers took the opportunity to stop/start the transmission of radio programmes for pedagogical reasons. In some instances, such teacher behaviour could double the pre-recorded time of a broadcast. It was noted that even where a teacher failed to capitalise on many of the potential opportunities for teaching-learning during a broadcast, the "teacher-proof" nature of many programmes ensured a basically successful lesson. *D45(f)* *D48(f)*

Follow up activities

All of the teachers questioned in Stage 3 said they did some follow up work with broadcasts. The amount seemed to vary according to the programme's ability to stimulate ideas and its relevance to on-going work. They felt that the "better" the programme the more likely it was to stimulate follow up activities, although the time available, and the quality of the associated booklets were other factors mentioned which affected the amount of follow up work. *D24*

The type of work generated by the programmes was very wide indeed. Sixteen types of activity were mentioned. Although Art and Craft work, Discussion, Language stimulation, Written work, Projects and Music, Drama, Movement and Environmental Studies were most often quoted there were many other varieties. *D24*

The type of follow up work generated by the broadcasts observed in Stage 3 appeared to depend on whether the activity took place immediately following the broadcast or some time afterwards. Where the activity immediately followed the broadcast it tended to consist of discussion, questions and answers, but subsequently the follow up was more extended and covered a wide range of activities. *D50* *D52*

As far as radio programmes were concerned, ten teachers used a follow up technique which involved the children both immediately after the broadcast and later, ten only used follow up immediately after the broadcast, and only three waited until later for their follow up. When asked for their reasons for timing the follow up activities as they did these teachers who used immediate follow up tended to quote pedagogic reasons ("childrens' attention span", "consolidation and reinforcement", "motivation and movement"), or timetabling ("end of day", "milk time and interval following", "convenience for class routine"), while those who adopted a later follow up used developmental arguments, ("project work, "individual reading"). *D50(1)* *D50(1a)*

Very similar reasons were given for the timing of the follow up in the case of TV broadcasts where six teachers used both immediate and later follow up, five used immediate follow up, two used later follow up, and one used no follow up at all. *D52(1a)*

The type of observed follow up activity tended to vary both according to the age of the child and the subject dealt with. If one deals with Aesthetic programmes as one example infant follow up activities could include printing, sticky pictures, collage, discussion and story telling while P7 could involve the pupils in a class performance. A Language Arts broadcast involved infants in discussion on meanings, words, reasons, drawing of programme subject matter while for P4 a Language Arts broadcast involved the pupils in Art, Maths, indoor and outdoor work, writing, reading, stories and poems. Environmental Studies broadcasts involved P5 children in project work including a local visit, work cards, playlets, individual and group research. Maths broadcasts involved one P6 in worksheets, group activities, furthering thinking and discovery, class discussion and another P6 in using games equipment, sticking shapes, weighing and measuring, colouring, display. *D51* *D53* *D51* *D50* *D51* *D53*

All these activities were possible and took place, but they varied from a brief discussion following the broadcast to a lengthy centre of interest approach embracing all aspects of the curriculum. Language Arts, Environmental Studies and Aesthetics broadcasts tended to the latter, Religious Education to the former and Maths and PE in between. *D77/8*

An example of good follow up activities is quoted in Appendix E. The programme was "Watch" with a Primary 2 class. On their return to the classroom the immediate follow up took the form of a recapitulation of the programme involving questions and discussion. Later follow up involved painting, drawing, colouring and making a collage of a dinosaur, filling in worksheets, using reading books, sets and mensuration in Maths, work on the diet of dinosaurs which was then related to care of teeth. *E1/2*

This type of follow up involved much work for the teacher, reading, preparing visual aids, selecting topic related books, preparing worksheets and cards. Thirteen of the 36 teachers interviewed

in Stage 3 felt that if they had more time available they would have increased their follow up activities. This feeling suggests that a conflict still exists for teachers between "real teaching" and the use of broadcasts. *D28*

It would appear that the suggestions for follow up work in the pamphlets issued by the broadcasting authorities were not used a great deal. In 29 out of 36 observations they were only used in minimal way, while six teachers followed their advice extensively. Almost two-thirds of teachers went to great pains to create their own materials. *D51(3,4)* *D53(3,4)*

As far as the children were concerned it was very obvious that they appreciated the follow up activities. Only two out of 124 said that they did not like doing things about a television programme after watching it, while only nine out of 124 did not like the teacher to go over a programme, and only 10 out of 148 did not like follow up work after radio programmes. *D57* *D59* *D65*

C. THE PUPILS' RESPONSE

An important part of the data gathering for the evaluation of school broadcasting was the interviewing in 24 schools of well over a hundred children, diversified by age, ability and media experience. The questionnaire design ensured that the nature of pupil perceptions was not pre-judged by allowing for elaborated responses. *D56 D*

Television

(a) One hundred and twenty-four children were interviewed and in the majority of instances enjoyed watching television at school, preferring the teacher to prepare them for the programme and, with only two exceptions, enjoying the follow up work. *D57/58*

(b) Although, however, the majority agreed that the television programmes were helpful, and would have liked more in school, less than one-third thought they explained things better than the teacher, the majority stating they did not always understand what they saw or heard. *D59/60*

(c) With regard to how school television was perceived in relation to programmes watched at home, the majority of the youngest children saw them as essentially the same with, however, home television being more like real life. The Primary V to Primary VII age group clearly perceived the difference, but also considered home television programmes as having closer correspondence to reality. *D61/62*

Radio

(a) One hundred and fifty-seven children were interviewed of whom more than half enjoyed listening to radio broadcasts in school, a figure boosted by the votes of the youngest children, whose response was largely to music and movement programmes. *D63*

(b) The majority of children of all age groups listened to radio out of school, but less than half of those who did listened to programmes in which people were talking or explaining things, much preferring pop music, news (sic) and sports programmes. *D63/4*

(c) The youngest children were enthusiastic about music and movement programmes. *D64*

(d) Less than one-quarter of the children thought radio taught them better than their own teacher. As with regard to television children overwhelmingly voted in favour of preparation and follow up activities. *D65*

Of the 150 responses which could be categorised in relation to media preference the response was approximately four to one in favour of television, with the votes for radio coming mainly from the youngest children. *D67*

Programmes observed: achievement of objectives

The range of programmes "observed" by researchers covered different curricular areas and the entire age range of the Primary school. *D68* The purpose was to note pupil response and to judge the extent to which programme objectives had been achieved.

Emerging from this observation was the fact that objectives which *D69* required most reinforcement were precisely those which present problems in non broadcasting teaching, viz. where concepts are involved, especially in Mathematics. It is difficult, however, to draw firm conclusions from this, since in the Mathematics programmes the teacher did not have the facility of the start/restart associated in Primary schools with radio, and hence it was impossible to intervene within the context of the tramsmission itself, when it was obvious that the concept had not been grasped.

The objectives of many of the 13 programmes observed with the *D68* youngest children were in terms of developing listening and movement skills and encouraging imaginative response to music and narrative stimuli. These objectives were largely realised, children learning to move in a controlled and imitative way.

Finally, throughout the researchers' observation comments and the recording of children's reactions, there was considerable evidence of the way in which the media can stimulate both children and teachers to respond imaginatively in Art, Music, Language, etc, and to pursue systematically ideas, problems etc., emerging from the programmes.

SECONDARY SCHOOLS

A. FACTORS FACILITATING THE EFFECTIVE USE OF BROADCASTING

The factors facilitating the use of school broadcasts in the secondary school are, as with the primary school, the attitudes of school personnel and their role with regard to broadcasting, the facilities within a school in terms of the building, the appropriate hardware and software and the translation of these into appropriate organisational structures. However, the relative importance of individual factors varies from that found in the primary school.

1. The role and attitudes of school personnel

The Head Teacher

Although secondary head teachers mostly have a policy towards school broadcasting, their role with regard to broadcasting is much less participant than in the case of the primary head teacher. *B39(6)*

The most positive policy by head teachers of the Stage 3 sample, found in one quarter of schools, was the creation of a system which would meet as fully as possible the requirements of staff for audio visual software (including broadcasts) and associated hardware. *D83(1)*

The most common policy, operating in five of the 17 schools, was a neutral one in which the head teacher respected the freedom of heads of departments and left it to them whether they used broadcasts or not and how much they used broadcasts if they decided to do so.

Three schools had resource or audio visual committees which were responsible in general terms for promoting a wider use of audio visual software including recorded broadcasts.

Inspite of the less participant role of the secondary head teacher with regard to broadcasting use (e.g. only one secondary head was found who prescribed limits to use, and none suggested which broadcasts should be used) his overall attitude is nevertheless perceived as a factor in encouraging or discouraging use. The positive attitude of the head teacher was noted in 17 Stage 1 schools by researchers, twice as often as negative attitudes. *B49(4)*

The system of managing broadcast resources in schools was felt by teaching staff to be effective in 12 schools, while researchers felt this to be the case in 15 schools. *B39(6)* *B48(1)*

In only a few schools (9% of Stage 1 schools) are school broadcasts discussed at the level of boards of studies and then only occasionally. Where there is discussion of broadcast usage this is more often at departmental level, although even here such discussions are infrequent. *B40(11)*

While head teachers rightly delegate functions with regard to broadcasting use and management of resources, their perception of the value of broadcasting, pursuit of adequate equipment provision, and creation of appropriate formal organisational and communication structures within the school are important in order to make it feasible for those who want to use broadcasts to do so.

The Assistant Head Teacher

While the Head Teacher generally sets cash limits on expenditure it is most often an Assistant Head Teacher, (or sometimes Depute Head Teacher) who is responsible for the distribution of information, timetabling of rooms, and ordering of software. *B39(6)* This was found in half the Stage 1 schools and was the most common pattern in the selected Stage 3 schools. *D84(2)* The AHT is thus, most frequently, the key administrator with regard to school broadcasting policy, controlling technicians where available and co-operating with heads of department. The policy for school broadcasting is devised by the HT often in conjunction with an AHT, (or Heads of Department) who is then responsible for its transmission to staff. This policy may simply be information about resources and how to book recording and replay equipment.

In the Stage 3 schools which were observed a great variety of systems of managing and organising broadcast resources emerged. *D87(3)* The AHT often played an important part in this, particularly in ordering the broadcasting booklets and their distribution and the booking of equipment, recording and replays. Occasionally (in two schools) he carried out maintenance of equipment and small running repairs.

Some form of training in the use of broadcasting was given in almost all the Stage 3 schools, although this was generally instruction in the handling of equipment. In one-quarter of these schools this was carried out by an AHT (by technicians or heads of department in other schools). *D87(4)* Instruction in how to use broadcasts in the classroom was much less common, occurring in only seven schools, provided by an AHT in three schools.

Interestingly enough a much smaller proportion (one-quarter) of the Stage 1 schools claimed that any form of training in the use of broadcasting was given to members of staff as an aspect of in-service, and in only one was there evidence of an adequately structured programme. *B40(12)* In virtually all these schools such training was a responsibility of the principal teacher.

Thus the AHT has an important role to play in the use of broadcast resources, as key administrator of policy in the school, the link between HT and heads of department, a manager of resources and the member of staff with the opportunity to ensure a balance of use across departments and to develop and promote the good use of broadcasting in the school generally.

The Principal Teacher

The role and attitude of the principal teacher are crucial determinants in the response of a department to broadcasting. While his place in the administrative structures that promote, maintain and advance the use of broadcasting resources in the school generally may be of importance, it is the intradepartmental function that is of greatest significance.

It is the principal teacher's attitude that is most often the department's climate, determining policy, expressed in mood, use, money, encouragement and often example. Such elements are difficult to gauge being a combination of opinions expressed, values adopted and practices endorsed and developed.

In virtually all schools that claimed some form of established structure for broadcasting (98 out of the 100 schools surveyed in Stage 1) the principal teacher was involved in that structure. *B39(6)* In 10 instances it was a principal teacher who was in charge of distribution of information, timetabling, and the ordering of notes and pamphlets for the school as a whole. In the majority of cases this duty was given to an assistant head teacher, however, although the principal teacher retained an advisory role on such matters as curricular emphasis, purchase of equipment and the day to day running of the system, in addition to his responsibility for passing on information to his department. There were only a few schools in which the principal teacher was engaged in transmitting teachers' requests for recording or replay facilities.

While the roles sketched in above are important in defining the principal teacher's place in the formal, management patterns of the school it is clear that it is at the level of the informal that most of the principal teacher's importance resides.

Generalising, it seems clear that school broadcasting is not a subject of major importance in the largest number of schools. In 57 (out of the 100) schools, at meetings of school boards of *B40(11)* studies or at departmental staff meetings, school broadcasting was "seldom" discussed, and in another 10, "never". In only 10 instances were broadcasts discussed frequently at such meetings.

Moreover, relatively few principal teachers gave any attention to the training of junior members of staff, particularly in *D87(4)* how to use broadcasts in the classroom.

A defence (if there be need for one) comes easily, for many of the situations to which staff fall heir, and for whose attitudes the principal teacher might seem responsible, arise from situations outside his control.

in a school that has one, or no VCR, does not possess adequate numbers of videotapes, lacks the services of a trained technician, possesses an inadequate viewing area for reasons of location, size or pattern of use, has a poor repair service for defective equipment, and junior staff who are, if not untrained, at least unmotivated by pre-service training, then the adequate use of school broadcasting becomes problematic, particularly when set against the principal teacher's other, regular and perhaps more significant daily pressures.

Clearly, such matters belong to the domain of perceived values, and the claim that responsibility for such a situation lies beyond the school is easy to accept - perhaps too easy.

Nevertheless, one returns again to the department and specifically to the evidence that certain subjects - Modern Languages, History and Geography for example - appear far heavier (although not necessarily happier) users than others; visual Art departments, for example, would appear to be very low users and nearly all principal teachers of the subject who were contacted have claimed that it is the content and scope of the available programmes which are to blame. *C34* *C81*

Heavy use, for obvious reasons, tends to display more examples of good use than does the lighter end of the scale, and the opinions of principal teachers on what constituted good use were remarkably similar: pre-viewing was regarded as a "desirable impossibility"; adequate preparation essential - often this implied use and familiarity with the teacher's notes, occasionally parallel materials; adequate integration with the curriculum; relevant discussion or appropriate extensions of the programme in subsequent class work.

There is a variety of reasons for this state of affairs. By far the most persuasive reasons have to do with the match between medium, subject and need, the history of the subject and its "natural" methodology. Some subjects respond more appropriately to a visual treatment than others, and often this is at the level of accumulations of information impossible for the single school to provide. Negatively, subjects such as English which in practice are inherently text-centred, and whose practitioners have been trained in such a manner, frequently resist broadcasting or are uncertain how to use it unless there is either a discursive outlet or an immediate attachment to a text.

"Active" departments often operate in isolation: departments with regular discussion of school broadcasting have not been able to identify similar interest in any part of the school, and in one case (in Modern Languages) nowhere else in a fairly large Division! *C39*

Many factors determine such differences but the principal teacher's attitude is clearly one of the more important.

Most of the 18 principal teachers interviewed in Stage 3 in most subjects were fairly content or better with the provision of programmes and back-up materials. All believed the teaching of his/her subject benefited from the use of broadcasts which provided a useful variety of informational sources, a professionally produced supplement to the curriculum. Nearly all felt that the programmes on offer presented a realistic picture of their subjects, were true to the behaviours of the specialism and its specialists, and in the majority of cases that the programmes offered were credible, with acceptable presentation, content and structure. The professional qualities of the programmes were more frequently praised than condemned, and it was usually agreed that they had the concomitant ability to raise student interest, teacher performance and effectiveness. Complaints tended to focus on gaps in the service so far as subject presentation or target audiences were concerned. Quality was only occasionally an issue, and such attitudes were most frequently directed at a specific series rather than at the whole range of provision. Only aesthetic subjects tended to complain about serious omissions and the use of the subject as a service "filler" for other specialisms; there was, however, a limited cross-disciplinary feeling about a certain shabbiness in production values that it was claimed was being detected by a discriminating audience of children raised on the higher quality of general output to the detriment of the programmes' educational effectiveness.

D91(4)
D93(6c)
D92(6b)
D92(6a)
C81
C42
C50
C63
D93(c)

There was generally considered to be a bias towards the more able students in the school, perhaps the reason for the general sentiment among principal teachers that broadcasts in no way determined the curriculum for non-certificate pupils.

D98(11)

Equipment generated the largest, and loudest, volume of complaints. The desperate need for adequate technical back-up in the school both of equipment and technical help was expressed and it was frequently claimed that this poverty of provision matched a depressing lack of interest in broadcasting shown by the advisory services. The quality of the equipment - particularly with newer VCR formats and with radio universally - was not an issue. Television was the most popular medium, usually because it was felt that it best met the cultural expectations of the audience; a small number of proponents of radiovision, and a smaller number of radio enthusiasts praised the cheapness, reliability, portability, and general convenience of these media, and although there were complaints about lack of listening skills among pupils there were few indications that even a minimal level of training was being provided.

D90(2a)
D90(3a,b)
D90(3c)
D91(4c)
D91(4d)

In the eyes of the principal teachers broadcasting often seemed a minority enthusiasm for reasons usually said to be embedded in the nature of the school or the attitude of the department, themselves the products of external constraints. Nevertheless it is clear that the principal teacher has a major responsibility for developing and supporting the use of broadcasting in his department. And while the local situation is clearly of importance, the example of some departments using broadcasting well, often in isolation, despite unfriendly surroundings, carries an implication impossible to evade.

The Class Teacher

The attitude of the class teacher is clearly a very important determinant of broadcasting use. Even in a school where equipment resources are sufficient and well managed and departmental attitude and policy encourage the use of broadcasts, it is possible for a teacher to decide to use no broadcasts.

Teachers perceive considerable freedom in their choice of broadcasts, most feeling able to select any programmes available if they were suitable. Two out of the 23 teachers interviewed at Stage 3 felt constrained to choose broadcasts which matched the syllabus and two felt constrained by limits on expenditure on equipment. Equally teachers felt free to organise their own classwork to at least some extent, thus leaving them free to use broadcasts as they saw fit. *D102(2)* *D101(1)*

The knowledge secondary teachers have of available programmes was only estimated (by researchers) as good in under two-fifths of the Stage 1 sample. One third were thought to have poor knowledge, and the rest medium. They were clearly seen as having less knowledge than their primary counterparts. *B43(21)* *B16(22)*

While most teachers said that information about forthcoming programmes reached them in time, more than one-fifth said it did not. *D102(3)*

The attitude of secondary teachers is generally a positive one, although placing less importance on broadcasts than primary teachers. Just over one-third of the Stage 3 sample (eight out of 23) felt that broadcasts made a significant contribution to their teaching. Nevertheless broadcasts were seen as a means of supplementing class work, providing variety, stimulating pupils' learning. The quality of school broadcasts was praised. However, the paucity of Scottish content in programmes, the domination of broadcasting by English term times and English curricula was a frequently voiced complaint. *D103(5)* *D99(3)* *B46(2)* *B46(3)*

Throughout the research, secondary teachers commented on their preference for general output programmes, expressing a desire that such programmes be made generally available to teachers. In many cases, schools did make use of these broadcasts particularly from series such as "Horizon", "Man Alive" and "World About Us" a tribute to the high quality of their production. *B49*

Teachers saw, in general, very little difference in the quality of the services offered by the BBC and the ITV companies, although there was a slight preference for BBC. *D108(12)*

While there are positive attitudes to school broadcasting use among secondary teachers, more secondary than primary teachers interviewed at Stage 3 are inhibited in their use by the physical constraints within the school. Moreover, they are generally more critical of the provision and gaps they perceive in it and place less importance on broadcasting in their teaching. *D103(4)* *D23(4)*

Individual subjects of the curriculum generated specific attitudes although there appears to be a consensus among secondary teachers that broadcasts provide a supplement to teaching, merely reinforcing or consolidating an existing curriculum which is ultimately governed by external exams. *D138*

In Modern Languages, radio is thought to be a serious medium with specific language advantages to the academic pupil, while television is thought to be more suited to the non-academic pupil, providing relief and entertainment. *C36*

While programmes do not always meet the requirements of English teachers, by and large those who use school broadcasting are pleased with it (although the use does not seem extensive). Complaints tend to be suggestions about alternative forms of presentation with different emphases, or about potential audiences, e.g. S3 and S4 given too little attention. *C46*

Programmes were praised by Science teachers for their relevance to syllabuses, their ability to show material which schools could not possibly show, their good presentation, although occasionally criticised for presentation (especially the mannerisms of the presenter) and trivial content. A need for programmes on various topics, e.g. genetics, synthesis of proteins was identified by teachers. *C50* *C51*

In Maths, broadcasts were used to augment and amplify schools' own courses for certificate pupils and put topics across for non-certificate pupils, although teachers felt a shortage of material on specific aspects of certificate mathematics courses, e.g. Pythagoras. *C54* *C55*

The use of broadcast material by PE teachers was almost entirely of recorded general output from which a wide range of programmes were used. Teachers felt strongly the need for the broadcasting agencies to seek advice on the needs of the school market with regard to PE broadcasts, their content and presentation. *C58* *C61*

Among Geography teachers there was an almost unanimous view that radio programmes are too long and would benefit from being broken into distinct sections. Moreover teachers felt a lack of radio material for S1/S2 and that all radio broadcasts ought to be radio vision productions. Television was generally praised, although specific criticisms, (such as the use of a particular commentator) were made. *C63* *C64*

History teachers used radio programmes mostly for certificate classes, for revision or follow up and television programmes were generally valued for their visual material, particularly newsreel. *C69*

Among Modern Studies teachers, radio was found to have a poor image while several TV programmes were praised for their relevance to pupils, particularly non-certificate early leavers. *C72* *C73*

The AV Technician

The role of the audio visual technician with regard to facilitating broadcast use in secondary schools is a crucial one. In the 84% of Stage 1 schools with a technician, it was chiefly the recording of broadcasts and the arranging of their replay that the technician's contribution was made. The technician felt his function was to meet so far as possible the needs of teachers which included making recordings, ensuring the equipment was in the right place at the right time, giving the teacher more time to teach. Seven technicians felt themselves to be indespensable, an attitude corroborated by teachers themselves, e.g. "before we had an AV technician, broadcasting was disorganised. The technician has brought the system into a highly organised and workable state". Where there was no technician, the lack clearly was recognised. *B39(6) B41 B42(20) B46(4) B47(5) B48(1)*

The main perceived hindrances to the technician's broadcasting work were lack of or deficiences in equipment: lack of video recording equipment, lack of a suitable place for recording, unsuitable school design etc. In almost half the schools where there were technicians, queue jumping by teaching staff occurred although this did not jeopardise the system. In a small number of schools, the technician felt unable to meet all the requests for his services, but in only one was he unable to keep the system going. *B42(19) B41(17) B41(16)*

Technicians had responsibilities with regard to broadcasting use in only two-thirds of the Stage 3 sample. Not all of these technicians were AV technicians, four of them being Science technicians performing the function of AV technicians. *D86*

In addition to the recording and setting up of broadcast and replay which emerged as the main roles in Stage 1, technicians were also sometimes found to have the responsibility of keeping receivers and recorded materials in a central place, and, in all cases, for the maintenance of equipment and carrying out of small running repairs. Moreover, in seven of the schools, they gave instruction to new teachers in the handling of equipment. *D87(3) D87(4)*

Thus the audio visual technician emerges as a key facilitator of broadcasting use, depended upon by teachers for smoothing the mechanics of use, enabling them to concentrate on the pedagogy.

2. The training of personnel

While it would seem obvious that training in the use of broadcasts could do much to motivate teachers to use broadcasts and promote effective use, only seven of the Stage 3 teachers had received any form of training in the use of broadcasts. Of these seven, only three had received formal training in a college of education. In only one-quarter of the Stage 1 schools was any form of training for junior staff in the utilisation of school broadcasts provided, and in only one of these was there a properly structured programme: most schools visited considered training in the use of school broadcasts mainly the responsibility of colleges of education. *D99(2) B40(12)*

Fifteen out of the 17 head masters interviewed in Stage 3 considered that teachers needed more assistance with or instruction in the use of school broadcasts, and yet in only seven schools was instruction in the pedagogy of broadcast use provided, although in 15 instruction was given in the handling of equipment. *D87(2)* *D87(1)*

A clear need emerges for more training in both operation of hardware and education in the use of broadcasts and for in-service training in broadcast usage for teachers of longer experience. The main responsibility for this training is seen to belong to the colleges of education, both at pre-service and in-service levels, but schools themselves perceive a responsibility to actively assist staff to expand their expertise in the use of broadcasts, by being willing to send them to in-service courses at colleges of education or by promoting in-school courses run by senior staff or by local authority advisers. A few schools, in fact, use part of the in-service days at the beginning of the school year for this purpose. *D99(2)* *D88* *D87(1)*

3. The material and physical resources of the school

Of the 23 teachers interviewed in Stage 3, 20 felt there were physical constraints within the school which inhibited their use of broadcasting. This is a remarkably high figure, considering that these schools were selected for their good use of broadcasts. These physical constraints relate to problems of equipment, buildings and software. *D103(4)*

The Equipment

While all the schools visited in Stage 1 had radio, 93% at least one colour TV and 94% video recording equipment, all Stage 3 schools had colour TV and only one school was without video recording equipment (although shortly to receive a VCR). Thus the specially selected schools were slightly better equipped than the Stage 1 schools. Nevertheless, inspite of the apparently high levels of equipping with relevant hardware, lack of, or deficiences in, equipment were frequently felt by the teachers to be a problem. When members of staff in the Stage 1 schools were invited to comment further about broadcasting in their schools, comments about equipment and facilities formed more than two-thirds of the total responses. In almost one-quarter of schools, teachers felt the need of video recording equipment. Researchers in their comments on these schools observed the need for such equipment in 12 schools. When Stage 3 teachers were asked about physical constraints influencing the use of broadcasts, shortage of video recording equipment was cited most frequently. *B36(2)* *D79(2)* *B45(1)* *D103(4)*

The need for TV sets, for more aerial points, for more adequate servicing and repair, and the problem of poor reception and of defective equipment were all mentioned by teachers. *B45(1)* *D103(4)*

Clearly the provision of equipment is an important prerequisite for the use of broadcasting and lack of appropriate equipment and deficiencies in existing equipment are perceived by teachers to be inhibiting factors.

The School Building

As well as the difficulties imposed by equipment deficiencies, the school building itself at times poses problems which militate particularly against the use of TV. The need to move pupils to a room set apart for TV viewing, and sometimes distant, with the often consequent separation of viewing and follow up was a disincentive to use. A school on a split site or on different levels imposed difficulties for the siting or transport of equipment. The need for a special TV room was sometimes noted as was the inadequacy of some viewing rooms which existed. Lack of space was sometimes a problem. *B45(1)* *B48(2)* *D103(4)* *B48(2)*

Software

Advance information about forthcoming programmes was most often disseminated to teachers by AHT or principal teacher. Eighteen of the 23 teachers (a higher proportion than average) found that this information arrived in time and 19 felt that sufficient information was proved to enable them to incorporate a given programme in their scheme of work with confidence. However, a few teachers said the material did not arrive in time (reflecting on school distribution) or contained insufficient information (reflecting on the broadcast publication). Though all teachers said that they familiarised themselves in advance with programmds, only half of them said that they had sufficient time and facilities to do so effectively. *D102(3)* *D108(11)*

While nearly all the Stage 3 teachers had the annual timetable of the broadcasting companies, and two-thirds used teachers' notes, only one-third used pupil pamphlets. Rates of use among Stage 1 teachers were higher with nine out of 10 claiming to use teachers' notes which they found of value, and about half using pupil's pamphlets. Cost was cited as the principal reason for non-purchase of these materials. *D111(d)* *B43(24)* *D112(f)*

As far as the stock of video cassettes or tapes was concerned, most teachers described the stock as enough or even extensive. These were generally stored in subject departments rather than centrally. Stock of sound cassettes was felt to be adequate in 91% of Stage 1 schools although only 28% of schools held a central list of recordings. *D108(13)* *B36(2)*

Three out of four teachers used at least one or more teachers' resources centres to obtain materials relating to broadcasts. Such material was borrowed in the main from either divisional or regional teachers' resources centres, although three teachers borrowed material from Colleges of Education and two from the BBC. In Stage 1 it was found that 83% of schools were either occasional or regular borrowers of material from teachers' resources centres or similar institutions. *D109(14)* *B38(5)*

B. FACTORS PERTAINING TO THE USE OF BROADCASTS

1. Broadcasts and the Secondary School Curriculum

Teachers' reasons for choosing broadcasts

When Stage 1 teachers were asked their reasons for choosing the broadcasts they used, the most frequently given reason was "curriculum match", the extent to which a programme fits the syllabus or the requirements of the curriculum. This reason was given seven times as frequently as any other reason given. *B43(22)*

Similarly, among Stage 3 teachers, fitting in with the syllabus or the structure and content of a programme were the principal reasons for choice. *D109(15)* The ability of a broadcast to add a new dimension to pupils' learning, to stimulate activity, to do what the teacher cannot do, were all appreciated by teachers. Suitability for the target age group was another important factor. *B43(23)* The most frequently given reasons for not using broadcasts were lack of curricular match (including lack of Scottish content) and lack of time.

Integration of broadcasts with specific subjects of the curriculum

Overwhelmingly then teachers in secondary schools only use broadcasts when they consider that they link closely with the overall curriculum or specific class syllabus. Broadcasting is viewed by secondary teachers as a reinforcement to their own teaching, consolidating the existing syllabus, fitting itself around teachers' requirements. The freedom of the primary school teacher to use broadcasts as a starting point, an initiator of new ideas, a springboard for extensive centre of interest work, is, because of external examination requirements, rarely available to the secondary school teacher.

Stage 2 of the research, where 200 teachers in 170 schools answered questions about their use of broadcasting, either in discussion or on questionnaire, provided much evidence of this close integration of broadcasting with the curriculum. Ten subjects were dealt with; Modern Languages, English, Science, Mathematics, Physical Education, Geography, History, Modern Studies, Religious Education and Art.

In Modern Languages, teachers stated that no programmes were used which did not in some way provide a curriculum match, with radio broadcasts being used particularly with academic pupils. *C37* There was evidence of relevant language, ideas and concepts being extracted from recorded radio broadcasts and listed for departmental use.

English teachers saw broadcasts as a very useful supplement to normal day to day teaching, often with reference to the requirements of external examinations and often as an introduction to materials unavailable to the teacher. *C41* Gaps in provision were noted: of language material and, particularly of material suited to the needs of candidates sitting external examinations. *C43*

In Science, almost without exception, programmes were said to be used for summary and consolidation at appropriate points in the course after the teacher had taught the topic or topics. C52

Similarly Mathematics broadcasts, teachers reported, were used to fit in to and supplement the schools' existing course "by demonstration of maths applied to real life". In most cases the individual broadcasts were shown once the teacher had covered the particular topic with a class. C56

The use of broadcasts in PE was almost entirely of general output. The amount of integration varied tremendously from highly structured editing to the most basic principles of co-ordination. No school organised the syllabus in the light of the available broadcasts. C61

Many Geography teachers stated that they integrated closely into their courses, creating worksheets, for example, based on radio broadcasts. Some used whole series, while others used excerpts of programmes from time to time. As with Modern Languages, radio broadcasts seemed to be used with the more able pupils. C65

The level of integration of History broadcasts into the curriculum varied widely from school to school, with some use of the broadcast as consolidation after teaching of a topic and some use of the broadcast as the main teaching of the topic with follow up activities such as worksheets or essays. Teachers perceived a lack of material at S3 and S4 levels and particularly on alternative "O" grade topics. C69 C70 C69

Most of the Modern Studies teachers said they used only broadcasts which fitted in with existing schemes of work, while a minority also used broadcasts as a starting point for new work. C73

RE broadcasts were incorporated, it was reported, into the curriculum in two main ways. On the one hand, single units would be used, e.g. on "Christmas", as currently relevent material. On the other hand, more structured use was made, either where, at school level, whole series were incorporated into courses or at divisional level, where divisional policy determined broadcast use throughout the division. C79

Teachers of Art were highly critical of the broadcasting provision in their subject, and little use was made among teachers contacted. Where use was made it was as preparation for external examinations or as a stimulus to practical work, e.g. pottery, collages. No secret was made of their use of general output to meet their needs. C81

2. The Good Use of Broadcasts: the practice in selected schools

Introduction

The main focus of the third stage of the research was the good use of broadcasts in the classroom. Teachers were selected during Stage 2 on the basis of their apparent good use of broadcasts as revealed in discussion with researchers. *D1*

In the drawing up of the questionnaire, observation schedule and pupil response questionnaire, the traditional picture of what constituted good or effective use of broadcasts was assumed; that the teacher would prepare for using the broadcast by selecting material appropriate to the class and its work, becoming familiar with the programme content and perhaps preparing relevant materials for the class; that the class would generally be prepared by the teacher for the broadcast; that pupils might be directed to carry out certain activities during the broadcast under the supervision of the teacher; that there would be some follow up activity for most broadcasts either immediately or later or both.

In the event, these views of what constituted good and effective use matched the teachers' views of the ideal of good use. The teachers interviewed in Stage 3 believed that the programmes should be matched to the school curriculum and classwork, providing material to supplement the teacher's lesson and reinforce pupil learning. They also felt that adequate teacher preparation (with access to preview facilities) was of prime importance and that the programme should generate follow up work. Moreover, video equipment should be effective and a suitable viewing room available. *D107(9)*

However, only a few teachers felt that this ideal usage could be achieved. Two who felt that it could be achieved said that it could only be done using either radio or radiovision. The limitations described which prevented the achievement of good use all involved inadequacies of TV equipment such as those described on P31.

The related idea of an optimum number of programmes for use in a week was not so clearly defined among secondary school teachers as among primary. Answers given were many, because of the widely varying needs and interests of pupils and the demands of the curriculum at different stages throughout the secondary school. However, the most frequent response was "one programme per week per class per subject". *D107(10)*

Pupils themselves in their responses reinforced the perceived importance of preparation and follow up. Most enjoyed the preparation and follow up work and indeed many would have liked more. *D126/7* *D124*

Preparation

Teachers in Stage 3 were both interviewed and observed using broadcasts in the classroom and this revealed that preparation for programmes was generally twofold: firstly the process by which the teacher becomes familiar with the contents of the programme, and secondly, the teacher's preparation of the pupils.

The former was reported to researchers, the latter observed by them.

Almost all the teachers interviewed in Stage 3 said they familiarised themselves with the programme in advance as the first stage of preparation. This was done by referring to the annual programme and teachers' notes and pupils' pamphlets, and to a slightly lesser degree by previewing or prelistening or advice from previous users. Although two-thirds of the teachers said their schools had facilities for both pre-viewing and pre-listening nevertheless half the sample found that they were prevented from effective pre-viewing and/or pre-listening. Almost all the Stage 3 schools had BBC and ITV annual timetables, and 16 teachers used Teachers' Notes, but only eight used pupils' pamphlets. The figure of 16 out of 23 using teachers' notes compares very unfavourably with 90% reported overall use among Stage 1 teachers, but an examination of programme titles reveals that two teachers were using general output material. While three teachers had the filmstrips for Radiovision programmes, four users surprisingly, had not. More than half the teachers produced their own material to use in conjunction with the programmes. *D108(1)* *D111(d)* *D110* *D111(d)*

In all but one case materials for use with broadcasts had been ordered or prepared within the last three years. The "freshest" material was reported as being prepared by the teacher during the programme, and the oldest was prepared in 1974. Sixteen teachers were inhibited in their purchase of materials by expense. Purchase was not always precluded, but it was restricted to certain pamphlets or to only a few copies of each. *D112*

Having become familiar with the broadcast to be used, all but two of the teachers spent time preparing pupils for the programme. These two teachers felt that it was better to spend time on follow up and that there was never enough time for adequate preparation and follow up. Of the 15 teachers who did prepare for TV programmes beforehand, 13 did so by telling the class about the programme. Thirteen of the 15 also referred to the on going work of the class. This latter figure is of interest as only seven quoted Curriculum Match as a main reason for selecting programmes. In radio all the users told the class about the broadcast beforehand and five out of seven referred to the on going work of the class. *D114(1)*

In almost all observed cases, preparation, listening or viewing and follow up all took place in the same room.

The Use of Broadcasts

Series/programmes and the scheme of work.

Less than half the Stage 3 teachers used complete series of programmes: (unlike their primary counterparts who all used whole series) individual programmes, selections from a series, interrupted programmes, excerpts of programmes were all used. Such patterns of use were determined largely by considerations of content and aptness for the syllabus, and suitability for the age and ability of pupils. Where teachers did use complete series, three stated that the series matched the scheme of work throughout its length, but six stated that it made no difference to the scheme of work in terms of the planning and content. Five teachers placed broadcasts firmly in the area of "additional material", providing stimulus, enrichment, variation, good illustration *D109(15)* *D112(3)*

Media preference.

As with the primary teachers,a preference was shown for TV with its visual impact, 15 teachers finding it the most satisfactory medium and 14 using it most often. The average use per teacher with classes was one hour twenty minutes per week. While the highest user of television was three hours a week, the lowest was only fifteen minutes. *D104(6)* *D103(5a)*

Three teachers found radiovision most satisfactory, liking its reliability and flexibility, while one teacher preferred radio for its accessibility and convenience. Average use of radio was thirty minutes per week and highest use two hours. Two found radio and TV equally satisfactory. *D104(6)* *D103(5a)*

Pupils also preferred TV and indicated strongly that they would like more. *D123*

Conditions of use.

All the programmes observed in use were recorded and were being used within the normal time allocation of each subject. In six of the seven radio broadcasts, preparation, listening and follow up all took place in the same room, i.e. classroom or languages laboratory, so no movement of pupils between rooms was necessary except in one case. Four classes used headphones for radio - in a language lab, in Modern Languages, and two in History. Four of the classrooms used for viewing had television already in the room. Twelve classes, however, had to move to take the programmes, either to other classrooms, lecture theatres, or TV rooms. Movement created no problems. In 12 of the 16 TV broadcasts observed, preparation, viewing and follow up all took place in the same room. *D114(2)*

Despite the variety of locations for the use of broadcasts, (lecture theatres with tiered seating, classrooms with desks and rooms with informal seating), there was only one report by observers of bad lighting and seating, one of an unsuccessful *D115(1)*

set adjustment and one of a poor quality recording. In one case the picture was described as "only adequate"! Generally speaking TV monitors and radios were well positioned for pupils and observers reported good sound and vision in three-quarters of the TV viewing. Blackout posed no problems.

The broadcast in use

All classes were supervised by the teacher, and, in 15 of the 23 classes observed, pupils were involved in teacher directed activities including making notes, (ten) using worksheets, (four) and writing answers to oral questions. It could be argued that the instruction to "make notes" and the use of oral questions and the much less frequent use of worksheets indicated a fairly low level of specific preparation. That 21 of the classes observed were interested or very interested is not surprising as teachers were selected as good users and they in general would have selected good classes. Add an outside observer and it would be difficult to say if this were typical of the class. *D115* *D116*

During the programme more than half the teachers stopped, started, or otherwise interrupted the transmission of the programme to explain, direct activity or revise, and one-third talked through or over the broadcast to stress or highlight or explain. Some teachers did all of these. The nature of the programme and the teacher's conception of how to achieve the best form of communication with the pupils determined the method used. Where programmes had been produced with specific and clearly defined sections it was easier for the teacher to make use of effective techniques. Equally, if sufficient time was spent on preview, teachers could identify sections suitable for their classes. The observers noted examples of interesting method including the use of the broadcast to introduce new material, the stopping of the broadcast and the elaboration of points on blackboard and OHP, use of worksheets, then replay for self correction. *D117*

Follow up activities

Follow up varied in time, but was present in some form with all teachers: nine teachers followed up immediately, five did their follow up later while another nine did some follow up work immediately with later continuation. Most teachers favoured doing follow up immediately after the programme while the information was fresh. They felt that the gap to the next period was too long, that the impact of the programme wore off rapidly, or that they wanted to fit programme and follow up into one period. In some cases, follow up was defined as setting work based on the programme or work relating to textbooks. *D118*

In practice, for the teacher, follow up meant discussion, questioning, illustrating, explaining, emphasising, expanding and correcting, and for the pupil discussing, recalling, note making, writing reports and answers, and homework. *D118(2)* *D119*

Almost all teachers prepared their own follow up material, at least to some extent, and only two used pamphlet suggestions to a great extent, four to some extent, five very little, and eight not at all. This would again point up the teachers' apparent desire, largely because of restrictions in time, to slot the broadcast into one teaching unit. The planning of the follow up seemed to allow for flexibility and the introduction of spontaneous ideas, but a better indication of the integration of the programme into the class work is that in 14 cases out of 23 the observers reported follow up well related to reader, textbook, worksheets and kits. *D119(3,4)* *D120*

C. THE PUPILS' RESPONSE

The purpose in asking pupils what they thought about the use of broadcasting in their schools was to use the information they provided to enable teachers to make informed decisions about how to use schools' programmes or, at least, to understand their pupils' reactions to such use.

The results from this part of the investigation show with great clarity that whatever teachers may think about broadcasting, whatever value they attribute to educational programmes, however they view their pupils' responses to broadcasting, Scottish secondary school children, as a whole, enjoy broadcasts,approach them in a serious minded way, and value the contribution which these programmes make to their general education and to school subjects. While this is true for all schools' broadcasts it applies particularly to television.

The pupils' responses were considered in five ways.

(a) Did using schools' broadcasts encourage pupils to adopt positive attitudes towards, or a liking for, a subject?

(b) What was the overall attitude among pupils towards schools' broadcasts?

(c) What general opinions did pupils have about the use of schools' broadcasts?

(d) How did the pupils respond to specific programmes (those observed in use during the investigation)?

(e) Which characteristics of the programmes did pupils most appreciate?

Appendix D(121-129) contains the more detailed results, but a number of immediate observations may be made.

(a) A direct relationship between the use of broadcasts and a pupil's subject preference is difficult to substantiate. In other words, it is unlikely that by using schools' broadcasts alone a teacher will improve his or her pupils' liking for a particular subject. Where some such relationship might exist is among older academic pupils. For example, although senior pupils taking Modern Language courses often watch and listen to Modern Language broadcasts, it may be that the preference which such pupils indicate for Modern Language courses was not stimulated by the broadcasts and that the relationship - liking for subject and frequency of exposure to broadcasts in their subject - is untenable. *D122*

(b) Pupils enjoy radio and television programmes in school. In the majority of instances they watched and listened carefully, most of the time, to these programmes. Given the opportunity they would like to listen to more radio "sometimes", and are in no doubt that they would like more schools' television. Perhaps because their exposure to radio in school is less than to television they find it difficult to make comparisons and judge the merits and advantages to them of schools' radio. *D123*

(c) When questioned about the events surrounding viewing or listening to broadcasts, pupils made the following points. More time is spent in preparing and following up television broadcasts than is spent on radio broadcasts. In both cases less time is spent on preparation, quarter of an hour or less, than is spent on follow up - seldom more than half an hour. Yet the pupils themselves would have liked more time devoted to preparation and follow up. *D124*

Preparation and more particularly follow up are, for the majority of pupils, an enjoyable ingredient of programme use and it is surprising that more teachers have not capitalised on the interest in their subject which schools' broadcasts can generate. (Perhaps it is because this interest is not encouraged that it was difficult to establish the relationship in (a) above). *D125*

In addition to what has just been said, pupils also claim that preparation and follow up of schools' broadcasts add to their understanding and enjoyment of programmes. This being so, a more effective use of broadcasts, and one which would enhance learning, would, therefore, need to include more preparation and follow up. *D126/7*

(d) Pupils had no difficulty in articulating their opinions about specific schools' broadcasts. Television had a more immediate appeal than radio for most of the pupils taking part. There are several reasons why this should be so. First of all, a large proportion of the pupils in the sample (about half) were in the first two years of secondary school. They were, on the whole, exposed to more television than radio in school and their teachers usually spent longer in preparing and following up television programmes. Yet television already carries a degree of inbuilt illustration not matched by radio. Low levels of explanation and the reduced degree of illustration which must therefore accompany radio broadcasts are common aspects of the experience the youngest children in secondary schools have of radio broadcasts. This cannot be regarded as an ideal of broadcast use. Radio, as teachers who took part in the survey were the first to admit, remains a more difficult medium on which to concentrate than is television. Perhaps teachers will be encouraged by this kind of evidence from their pupils and be prepared to devote as much, if not more, time to radio broadcasts as they already do to television.

A striking feature of pupils' attitudes to broadcasting was revealed in their statements about television. To what has already been said about their enjoyment of television must be added the point that they brought to televison a critical faculty. Some of them did claim to enjoy all schools' television, but the majority expressed preference about series, programmes and even aspects of programmes they had followed in class. Developing children's critical faculties is often given as an aim of education. Yet, while these faculties are obviously at work when viewing schools' broadcasts they are, because of the limited time devoted to preparation and follow up, less fully developed than they might be.

(e) The last part of this investigation showed that Scottish secondary pupils appreciate the variety of content, clear sound effects, film excerpts and children in the programmes. While these results may be of more direct value to the creators of the programmes they do have a message for teachers as well. For their pupils, broadcasts provide a clear, true to life reflection of the pupils' own world. It is often difficult for teachers to enter this world and make statements about it which their pupils value. Broadcasts provide just this opportunity. *D127*

3. CONCLUSIONS AND RECOMMENDATIONS

THE USE OF BROADCASTS

In most instances, where teachers watch or listen to broadcasts with their classes they also carry out some form of preparation and follow up. Among the selected good users of broadcasts observed in Stage 3, the following features of use were noted:

Pre-preparation: Almost all the teachers took steps to familiarise themselves with the programme content in some way though few formally previewed or were able to do so. This first stage of preparation was carried out by reference to the broadcasting publications, through prior experience or advice from fellow teachers.

Preparation of pupils: Most of those selected good users of broadcasts saw preparation as an integral part of taking the broadcast, except when the programme was used as a "starting point", or where there was a close affinity between class topic and programme content. Such preparation, immediately prior to the broadcast, took the form of telling pupils about the programme content, perhaps referring to ongoing class work, but varied according to the nature of the programme.

Use (a) Primary teachers All the primary teachers observed used whole series and many used selected programmes from series. Only rarely were excerpts from programmes used. Some programmes formed part of the scheme of work, others were used more flexibly as a basis from which to extend, develop and adapt the scheme of work, and yet others made a self-sufficient contribution or were a complementary extra.

In the earlier stages of the research, with the wider sample of regular users of broadcasts in the primary schools three patterns of use emerged:

1. The use of programmes, particularly in Language Arts and Environmental Studies, across the curriculum either as innovators or back-up to large themes of work or centres of interest.

2. The selective use of broadcasts in Mathematics to reinforce and aid understanding of an existing published scheme of work being used.

3. The use of broadcasts, particularly in Aesthetics, PE, RE, and Drama to act as the scheme of work in these subjects when a teacher feels the lack of specialist expertise.

Pupils were generally interested in the programmes and associated with them in various ways. Teachers interacted with the broadcasts, particularly radio, talking over to highlight or clarify, stopping and starting the transmission.

Use (b) Secondary teachers By contrast with the primary teachers, less than half the observed secondary teachers used complete series. Individual programmes, selections from a series, interrupted programmes, excerpts were all used. Most used broadcasts to reinforce their own teaching and consolidate the existing syllabus. In the majority of observed cases, pupils were involved during the broadcast in teacher-directed activities such as making notes, using worksheets and writing answers to questions, and had had their interest roused by the teacher. During the programme the majority of teachers interacted with the broadcast in some form, stopping and starting or talking over to explain, highlight, direct activity or revise.

Follow up Follow up to broadcasts varied in time, but was present in some form in every case, varying from a brief discussion to a lengthy centre of interest. The range of activities was great, varying according to the type of programme and the age of pupil. For primary pupils, it included art and craft work, discussion, writing, reading, music, drama, movement and environmental studies. For secondary pupils, it included discussing, recalling, note-making and writing reports.

The majority of teachers prepared their own follow up materials, relying only minimally on the suggestions in the pamphlets issued by the broadcasting agencies, and relating them in many cases to class reader, text book, worksheets and kits.

Preparation and particularly follow up were enjoyed by the vast majority of both the primary and secondary pupils in the observed sample, and contributed, they claimed, to their understanding and enjoyment of programmes. While television appealed to most pupils more than radio, secondary pupils brought to that medium a critical faculty, expressing preferences about series and programmes.

The conditions of use in the primary school fell far short of the ideal. Both the way in which pupils were accommodated for TV viewing (generally two classes together, with children seated on the floor) and the quality of sound output for radio, adversely affected pupil learning. In the secondary schools, despite the variety of locations, the lighting, or quality of recording, or seating arrangements only rarely had a detrimental effect.

Among the wider sample of regular users of broadcasting, a fairly predictable pattern of use emerges, particularly with the regular use of whole series in the primary school. Decisions to use whole series are often based on considerations of equipment and accommodation, rather than the educational needs of the pupils. Moreover, some responses from teachers indicate that they consider the use of broadcasts as something essentially different from "real teaching".

Recommendations

1. At a general level, we would urge teachers to take their preparation and follow up activities as seriously as they do their other class work and to bring to broadcasts the serious-minded and considered decision-making characteristic of their normal classroom practices.

2. More specifically we would recommend that teachers should examine carefully their use of broadcasts in relation to their ongoing programme of work and the educational needs of their pupils. The great range of different ways in which broadcasts can be used appropriately should be considered, and the various functions such use can have whether motivational or curricular.

TEACHERS' OBSERVATIONS ON BROADCAST PROVISION

Through all stages of the research, the predominant attitude of teachers was appreciative of the value and quality of school broadcasts. However, some teachers commented on weaknesses they perceived in the provision of broadcast material.

1. The lack of match between broadcast output and Scottish school terms, and, occasionally, the lack of Scottish content in broadcasts.

2. The attractiveness, to secondary teachers, of high-budget general output broadcasts, by contrast with the smaller budget school broadcasts.

3. The lack of provision of broadcast material in Art and PE in the secondary school, and of material suited to certificate work.

4. The inhibiting effect of the copyright three year retention limit on the secondary teacher's wish to build broadcast material into courses for use over a period of time (particularly courses related to external examinations.)

EQUIPMENT AND FACILITIES

Despite the high level of school broadcasting equipment in Scottish schools, the evidence is that there would be more and better use of broadcast materials if equipment levels were increased, and if the problems of accommodation, movement of pupils and equipment and technical support could be overcome. Various factors impeding adequate use of broadcasts by teachers emerged at all stages of this research. Even among the selected secondary good users of broadcasts, almost all felt there were physical constraints within the school which inhibited their use of broadcasting.

The lack of video recording equipment was a serious drawback, particularly in primary schools where it was almost non-existent. Even the selected good users of broadcasts shared this problem, almost half of them observing a need for such equipment in their schools. Video recording equipment allows for a flexibility of use, not only making it possible for the broadcast to be used at an appropriate time, but enabling the teacher to interact with the broadcast and use it in a way which suits her requirements, (stopping, starting, replaying, using excerpts etc). This flexibility is denied most primary school teachers.

The lack of sufficient TV equipment was also a drawback in some schools. Where a school had only one colour TV, difficulties were found in making appropriate use of television for all pupils. Moreover, problems were reported in some schools with poor reception, interference, or unreliable equipment. When such equipment had to be repaired, delays were often experienced.

The stock of sound tapes in primary schools was sometimes insufficient to meet demands, limiting the long term use of recorded tapes.

Accommodation for the use of television often posed problems. The lack of a special room for viewing TV was sometimes noted and viewing areas which were used were often unsatisfactory.

The necessity to move classes some distance in order to view TV was an inhibiting factor, and in some schools which were on a split site or had different levels, the moving of equipment was problematic.

The lack of appropriate technical aid seriously inhibited the use of broadcasts in both primary and secondary schools. Auxiliaries, where they existed in primary schools, did much to facilitate broadcasting use and, in some cases, were essential in keeping the school's system going, or saving time for the teacher. Audio visual technicians, in the secondary school were seen as even more essential facilitators of broadcasting use, depended upon by teachers for smoothing the mechanics of use, enabling them to concentrate on the pedagogy.

Recommendations

1. That, in accordance with their view that school broadcasts are "among the most important resources available to education authorities"*, the Regional Authorities should consider the adoption of a standardised policy for the purchasing of equipment in order to eradicate inequalities of provision between regions, and should give due importance to the organisation and use of broadcast materials.

2. That serious attention be paid, by schools and regional authorities, to overcoming the various problems of equipment, accommodation and technical support reported here, thus facilitating ease of access to and better use of broadcasts.

*COSLA/SED Working Party Report on Resources Services to Education Authorities (Oct. 1980).

FORMAL STRUCTURES WITHIN SCHOOLS

Policy

The majority of schools taking part in this research claimed to have some policy relating to broadcasts, although this was often limited and informal. Among the selected Stage 3 secondary schools, the most common policy was a neutral one in which the head teacher respected the freedom of heads of departments and left it to them whether they used broadcasts or not.

In the primary schools, many head teachers fixed limits to the amount of broadcasting to be taken by any teacher in a week, and sometimes prescribed the series to be taken. Such decisions were often based on timetabling rather than pedagogical considerations.

Formal discussion of the curricular implications of the use of broadcasts was rarely found in either primary or secondary schools. While other teachers' opinion of a series was often an important element in determining choice, such discussion as there was was usually informally between teachers.

While, in secondary schools, individual departments might discuss the use of broadcasts within their subject, there was no evidence of schools' concern for the overall balance of use across subjects.

Recommendations

1. That each school should examine its practices in relation to broadcasting in order to adopt a policy more related to the educational and curricular needs of the pupils. A member of staff (probably AHT) should be given the specific responsibility of overseeing the policy and ensuring that it is carried out. Such a person would promote and advise on the use of school broadcasts.

2. that teachers should be encouraged to formally participate in the formulation of the policy for their school because of its influence on their classroom practice, and the policy itself should be reconsidered regularly in the light of changing staff facilities and broadcasts.

3. that in secondary schools, there should be discussion of use across departments and a member of staff (AHT) responsible for overseeing this so that a cross-curricular balance of use might be achieved.

Management of Resources

In primary schools the management of resources generally devolved on the Head Teacher or Assistant Head Teacher who would organise the purchase and maintenance of equipment, the timetabling and recording of broadcasts, arranging the use of rooms and the distribution of information. In the secondary school, it was most often an AHT who performed this role, although in the selected Stage 3 schools a great variety of systems of managing and organising broadcast resources emerged.

In most of the selected schools advance information about broadcasts did arrive in time, although in some cases the material was late.

Clearly where effective distribution of information is achieved, and broadcasting resources in general are efficiently managed, the use is made easier for teachers.

Recommendation

1. That a member of the school teaching staff (in secondary schools, an AHT, and in primary schools an AHT or HT) be delegated to have overall responsibility for the use of school broadcasting, distributing information and support materials, co-ordinating a system for the management of resources.

TEACHER EDUCATION

The research provides clear evidence of need in the field of educating teachers in the use of school broadcasting. The preliminary investigation into the situation in the colleges of education vis-a-vis broadcasting revealed uneven provision and for some students a complete lack. A clear policy on how students should be trained to use broadcast materials was not evident. What was found in the schools corroborated what was found in the colleges. Even among the teachers making good use of broadcasts, very few recalled formal college training which had assisted them in their use. Teachers and head teachers alike perceived a need for both pre-service and in-service training in the use of broadcasting.

The research also found that, taking preparation, presentation and follow up into account, as much as 20% of curriculum time in primary schools (and rather less in secondary schools) was involved with school broadcasting. This would suggest that training in the use of school broadcasting should logically have an important place in teacher education.

Recommendations

We would recommend training, both in the handling of hardware and software, and in the pedagogy of use, at three levels and involving the colleges, the broadcasters, the Scottish Curriculum Development Service and the local authorities in co-operation. We would recommend that

1. National

   (a) *Colleges of Education* should formulate a policy which gives to broadcasting an emphasis which is proportionate to its use in schools and provide a course on the use of broadcasting which is a specific and significant part of the pre-service training of teachers.

   (b) *Broadcasters* the broadcasting agencies themselves in conjunction with subject organisations should contribute to training in the use of the material they provide by

      (i) exploring various ways of providing information on the specific aims of series and suggestions about use, e.g. by "trailers" about a series

      (ii) making a continued contribution to training activies such as those sponsored by SCET at Moray House and Aberdeen Colleges of Education.

2. Regional

   (a) *Local authority teachers' centres or colleges of education* (or both) should set up a room or area where teachers can have access to the broadcast literature and see examples of recorded programmes. Examples of good use of broadcasts could be located here and materials about the use of broadcasting. Such broadcast resource centres should have close relationships with the broadcasting organisations. and links with the Scottish Curriculum Development Service and might well form ideal centres for pre- and in-service training.

(b) *Colleges of Education* should

(i) provide in-service courses for teachers in the "good and effective" use of the broadcasting media in relation to the curriculum.

(ii) include in existing management courses for head teachers information about the management of broadcast resources in schools.

3. Schools themselves should play a part in furthering the skills and knowledge of staff, especially probationer teachers or those new to the school, by

(a) formally incorporating discussion of the pedagogy of broadcasting use at departmental staff meetings in secondary schools and, in primary schools, formally discussing the contribution and use in specific curricular areas.

(b) providing training in the handling of the school's radio and TV equipment, possibly during in-service days immediately preceding the start of the school year.

(c) contributing examples of successful use of broadcasts to local centres in order to disseminate more widely such examples of good practice.

Appendices

The appendices to the report, listed below, are lodged in the libraries of each of the colleges of education and in the Scottish Education Department.

Appendix A	:	College Use of Broadcasting
Appendix B	:	Stage 1 Report
Appendix C	:	Stage 2 Report
Appendix D	:	Stage 3 Reports
Appendix E	:	Examples of Broadcasting Use
Appendix F	:	An inter-college research project: its successes and difficulties
Appendix G	:	List of Participating Schools